

CHAPTER - 12

REPRODUCTION IN PLANTS

1) Reproduction :-

Reproduction :- is the production of new individuals from their parents.

The **vegetative parts** of the plant are the roots, stem and leaves.

The **reproductive parts** of the plant are the flowers.

In plants there are two main types of reproduction. They are asexual reproduction and sexual reproduction.

i) Asexual reproduction :-

In asexual reproduction new plants without the help of seeds.

ii) Sexual reproduction :-

In sexual reproduction new plants are produced from seeds.

2) Asexual reproduction :-

In plants there are different types of asexual reproduction. They are vegetative propagation, budding, fragmentation, spore formation etc.

i) Vegetative propagation :-

In this method, new plants are produced from the vegetative parts like the root, stem or leaves.

Eg :- If the stem cutting of a rose plant or money plant is planted in the soil we can get a new plant.

Potato has small **buds** called **eyes**. If a part of the potato with an eye is cut and planted in the soil we can get a new plant.

If a part of ginger is planted in the soil we can get a new plant.

Bryophyllum has **buds** in the leaf. If a part of the leaf with bud is planted in the soil we can get a new plant.

If a part of a cactus plant is planted in the soil we can get a new plant

Stem cutting of rose



Money plant



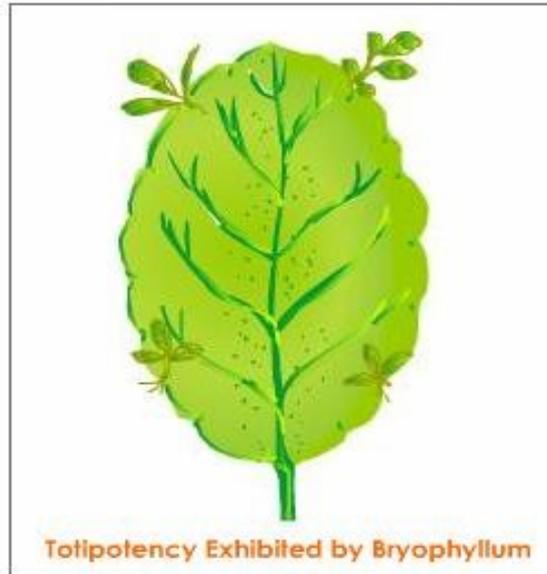
Potato plants sprouting from eyes



Ginger with new plants



Bryophyllum leaf with new plants

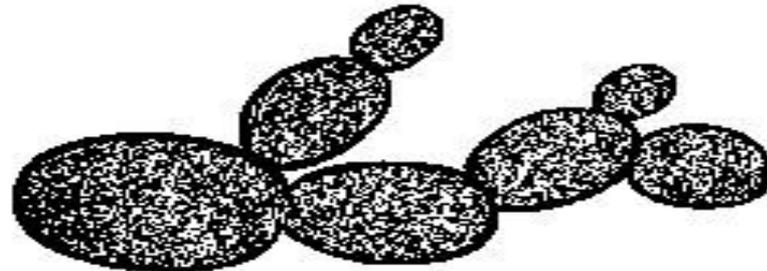
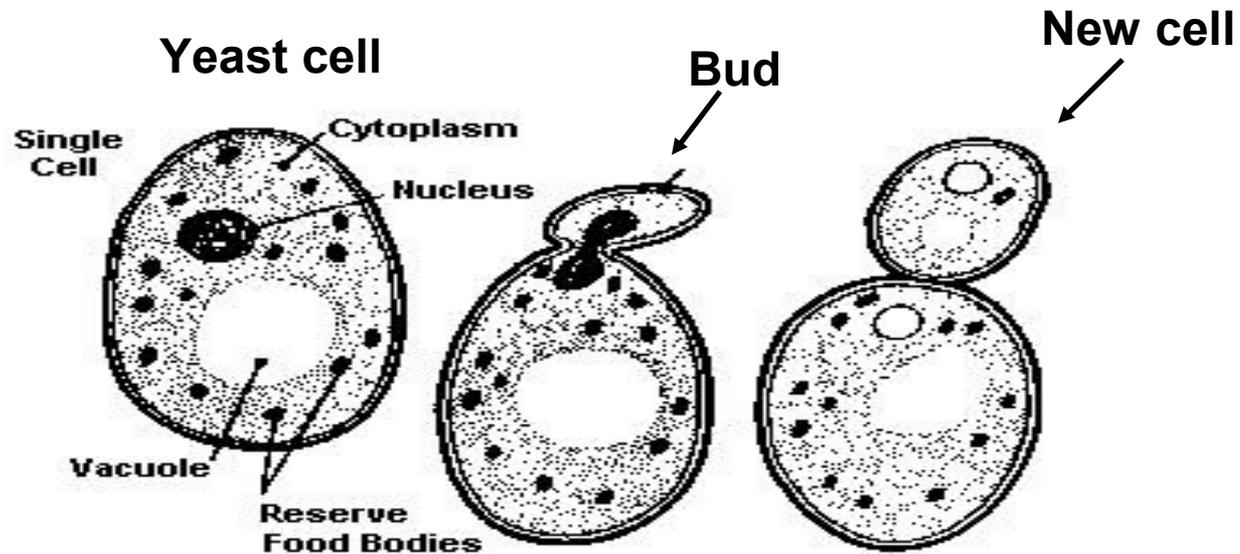


Cactus



ii) Budding :- Eg :- Yeast

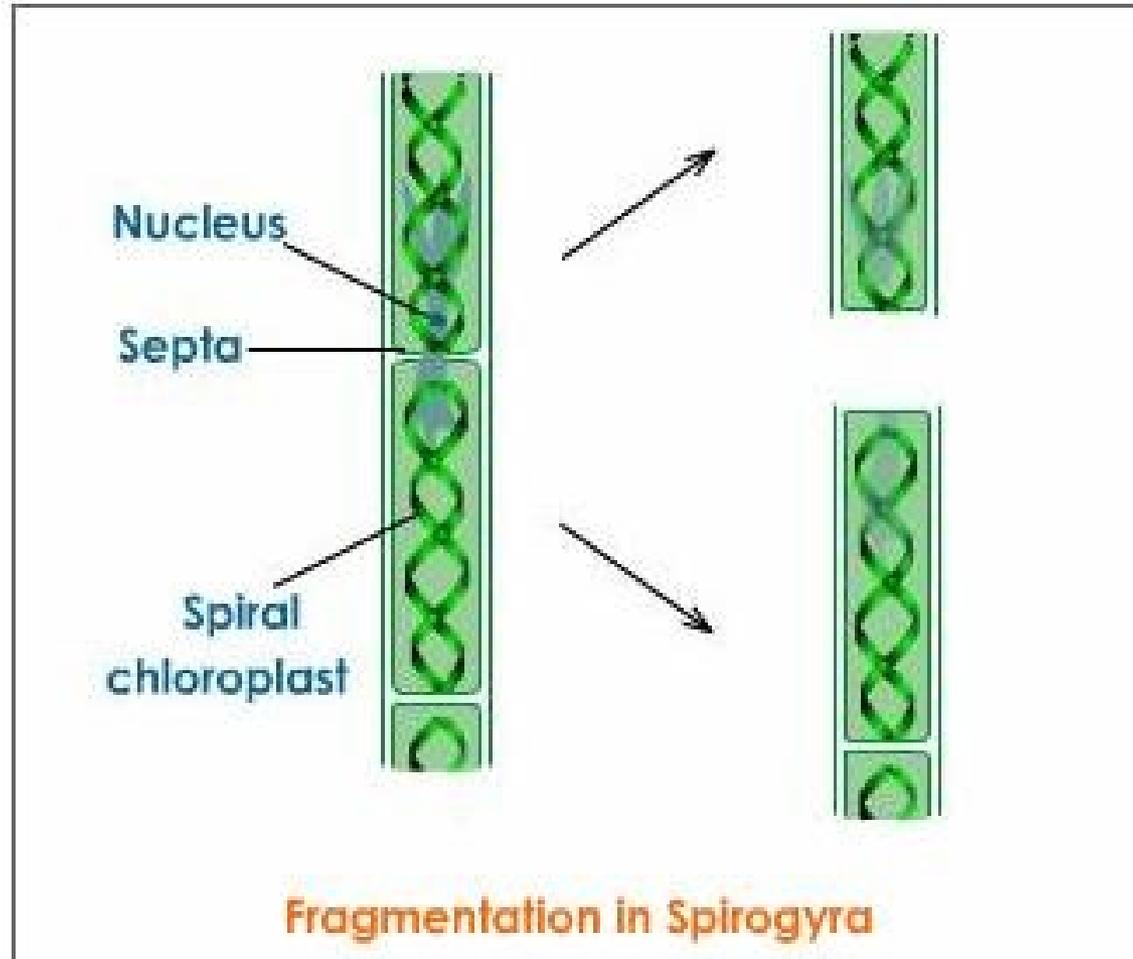
In this method a small projection called bud is formed on the yeast cell. The bud grows and becomes a new yeast cell. The new yeast cell also grows and produces more yeast cells.



Budding in yeast cells

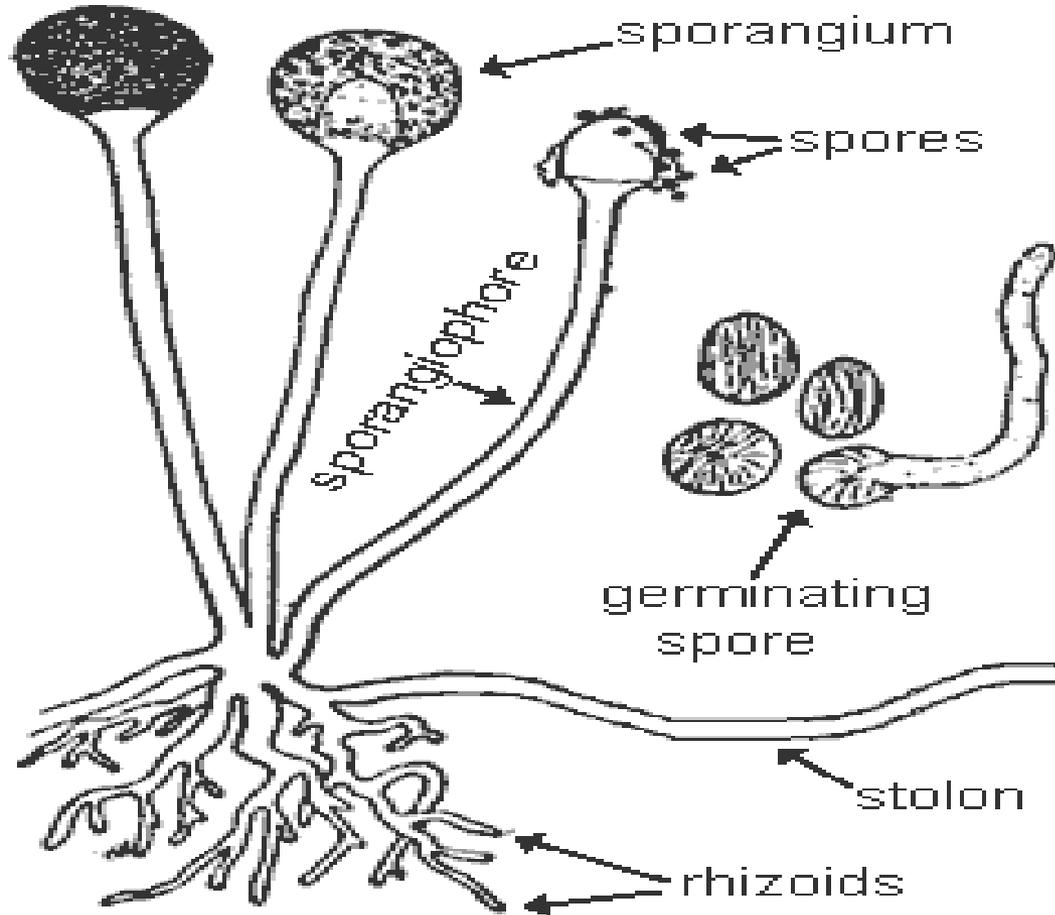
iii) Fragmentation :- Eg :- Spirogyra

In this method the plant breaks up into two or more fragments and each fragment grow into new plants.



iv) Spore formation :- Eg :- Fungus, Fern etc.

In this method the fungus produces spores. The spores germinate and produces new plants.



Spore formation in fungus

3) Sexual reproduction :-

Flowers are the reproductive parts of the plant. **Stamen** is the male reproductive part and **pistil** is the female reproductive part.

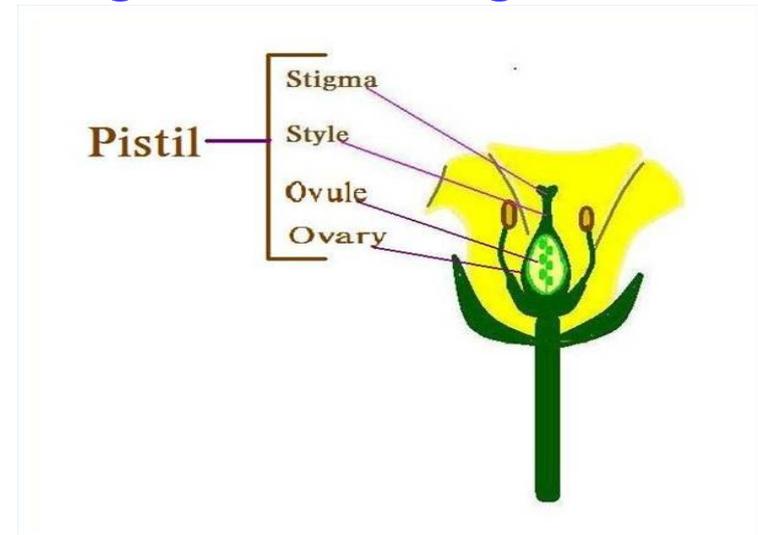
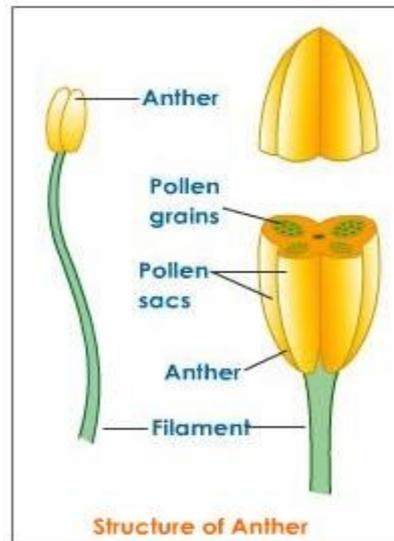
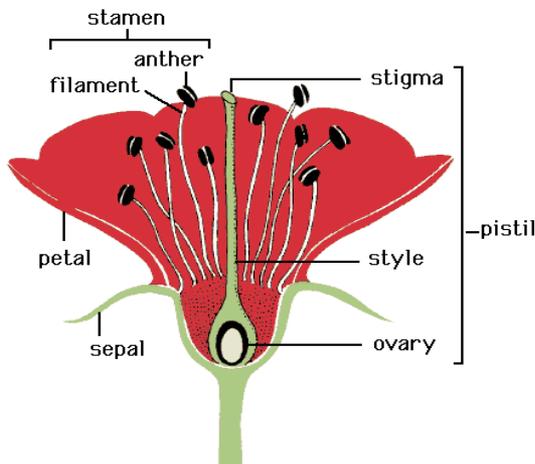
Flowers which have only the stamen or only the pistil are called **unisexual flowers**. Eg :- Maize, Papaya, Cucumber etc.

Flowers which have both the stamen and pistil are called **bisexual flowers**. Eg :- Rose, Mustard, Petunia etc.

The stamen has a filament and anther. The anther contains pollen grains which contain the **male gametes**.

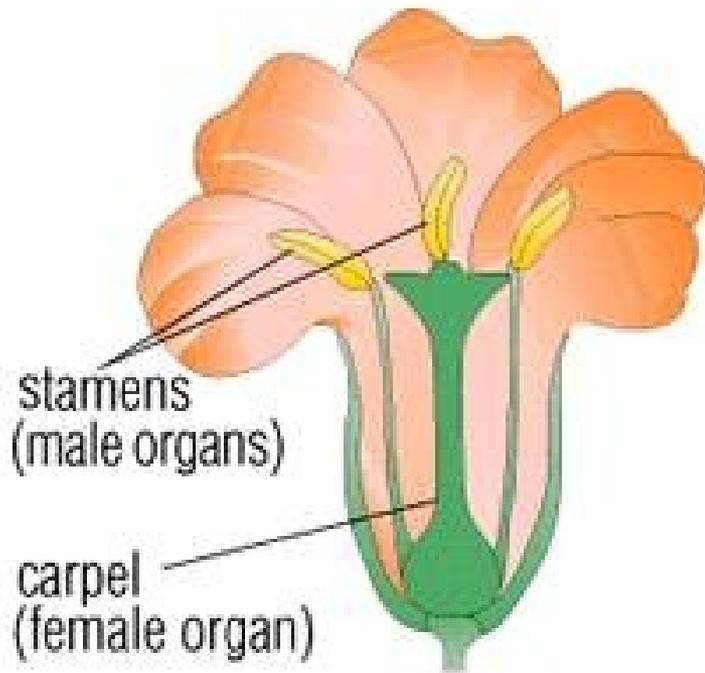
The pistil has stigma, style and ovary. The ovary contains ovules which contain the **female gamete or egg**.

In sexual reproduction the male and female gamete fuse together to form a **zygote**.

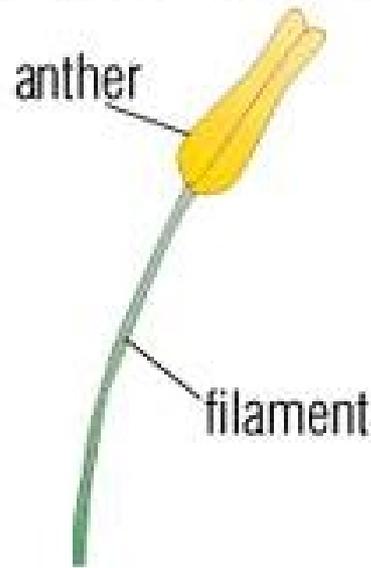


Reproductive parts of a flower

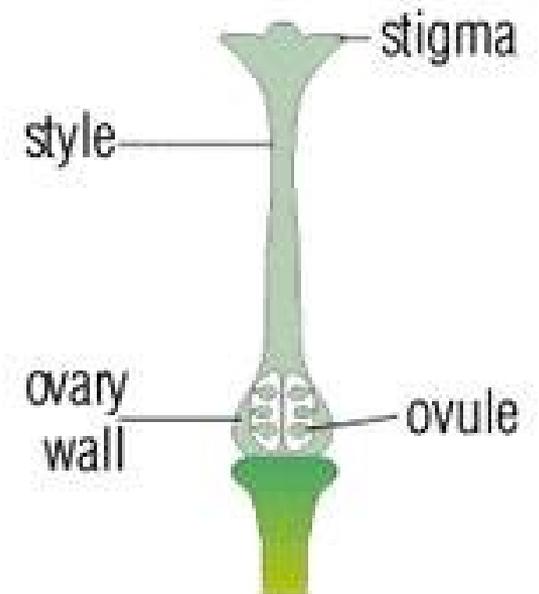
reproductive organs in flowering plants



structure of a stamen



structure of a carpel



a) Pollination :-

The transfer of pollen grains from the anther to the stigma of a flower is called pollination.

Pollen grains are transferred by wind, water or insects.

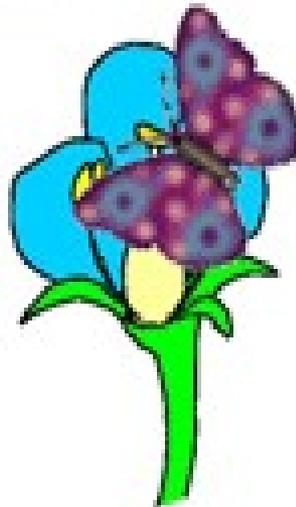
If pollen grains lands on the stigma of the same flower, it is called self pollination.

If pollen grains of one flower lands on the stigma of another flower it is called cross pollination.

POLLINATION



FLOWER 1

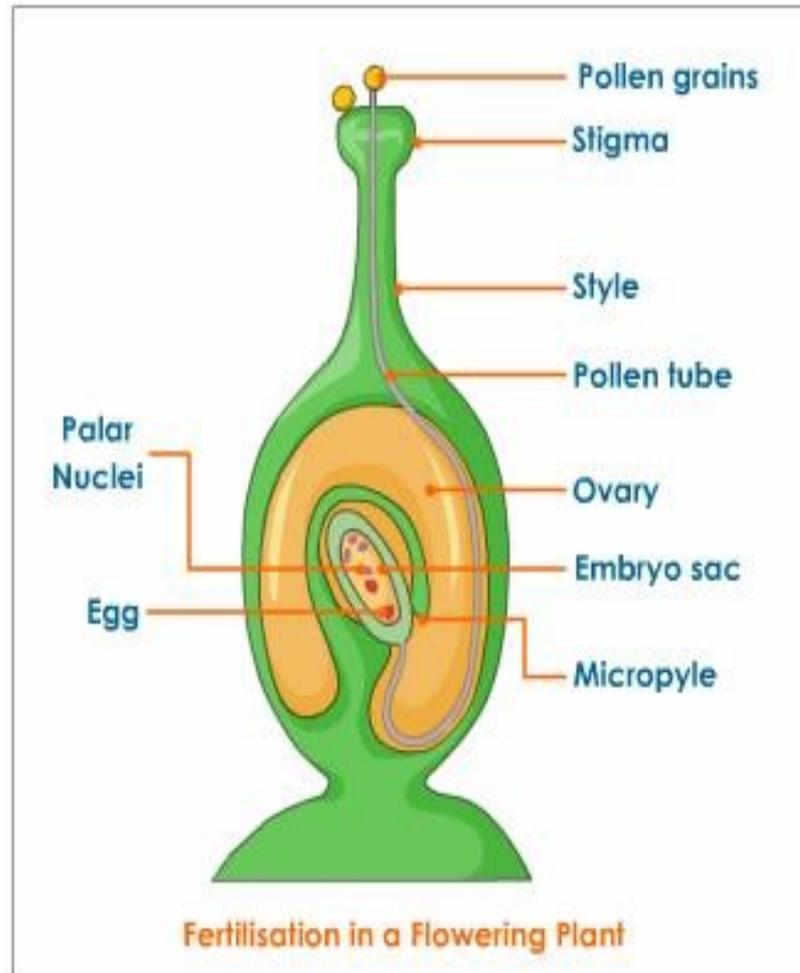


FLOWER 2

b) Fertilisation :-

The process of fusion of the male and female gametes to form a **zygote** is called **fertilisation**.

After fertilisation the zygote develops into an **embryo**. The ovule then develops into the seed and the ovary develops into the fruit.



4) Seed dispersal :-

The carrying away of seeds from one place to another is called **dispersal of seeds**.

Seeds are dispersed by wind, water and animals.

Seeds dispersed by wind are light, have wings or hairs so that they are easily blown away by wind. Eg :- drumstick, maple, sunflower, aak etc.

Seeds dispersed by water have spongy or fibrous outer cover so that they can float on water. Eg :- coconut

Seeds dispersed by animals have spines with hooks so that they can attach to the bodies of animals. Eg :- xanthium

